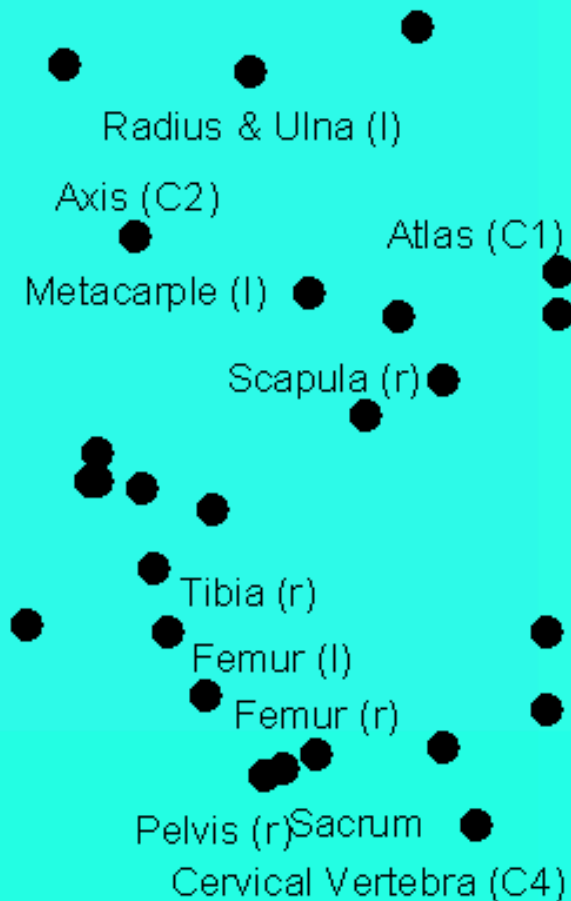
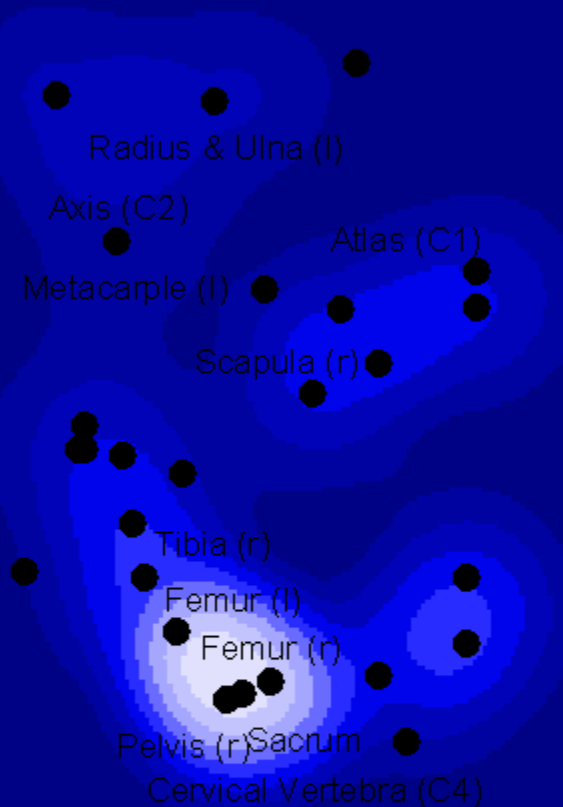


Axim™ X3i



Data collected in the field
Dell Axim running a GPS
Exact location
Bone type
Bone weight was added later

**In the GIS Lab a Kernel Density Analysis was run,
weighted by size of bone
The white area is the most likely soil sample location for Anthrax**



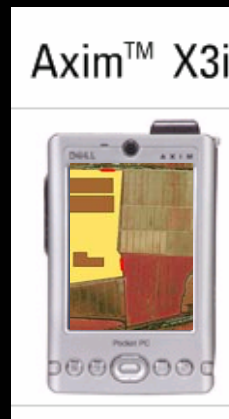
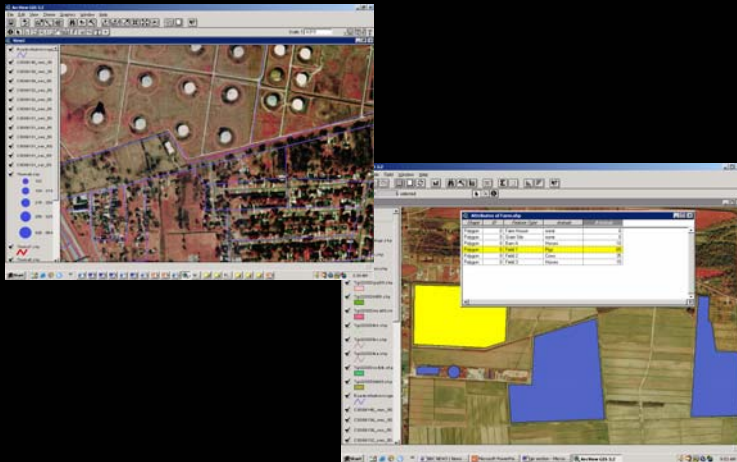
*This could have been performed
In real-time, with cell connection
Uploading data to the lab*

Using Spatial Analysis During an Attack

Reports of Disease are called in:

Human – get address – match to a street network

Animal – get exact location (GPS / Heads-Up Digitize)



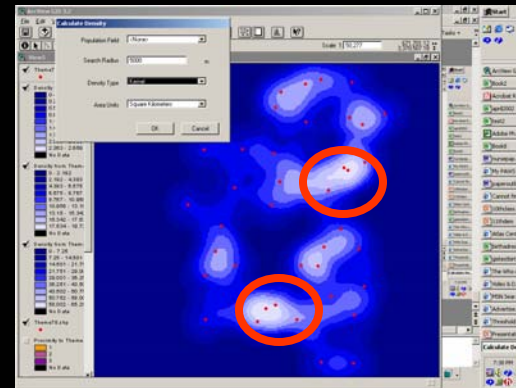
Is there a cluster?
Is there an attack?

It is important to identify quickly if an attack is occurring

After the event, there is a need to understand the origin of the attack

Obviously need for biochemical testing / validation

*There are GIS approaches that can give a “quick-and-dirty”
Impression....find the “hotspot”*



Traditional GIS Approach to a Spatial Problem

Problem....Idea
(Data collection)

Hypothesis



Confirmatory

Exploratory

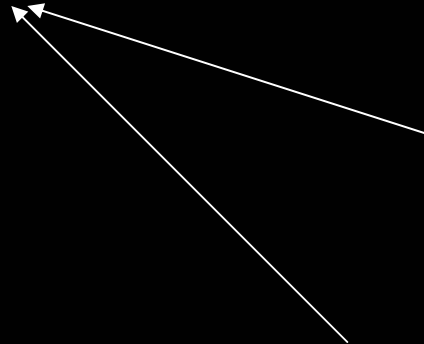
Data Input

GIS

Data Manipulation

Data Visualization

Data Analysis



All things Being Equal....

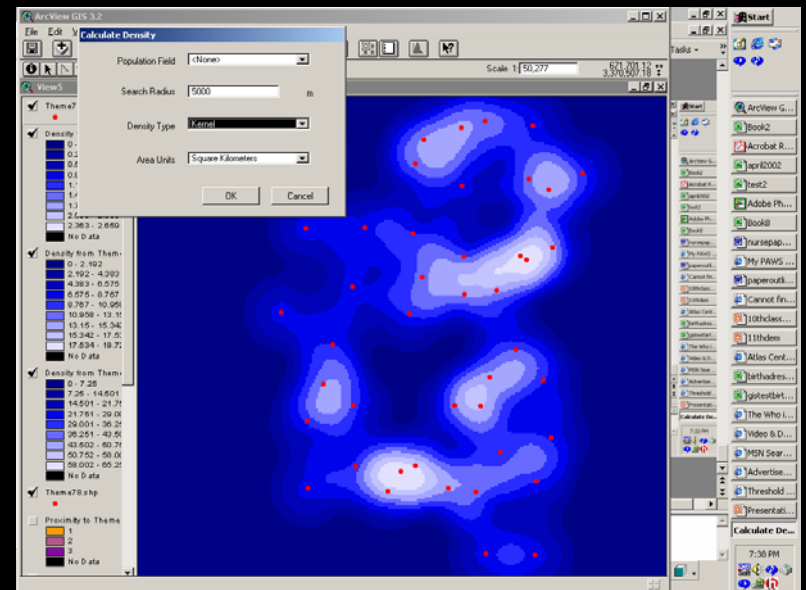
The Concept of Distance Decay

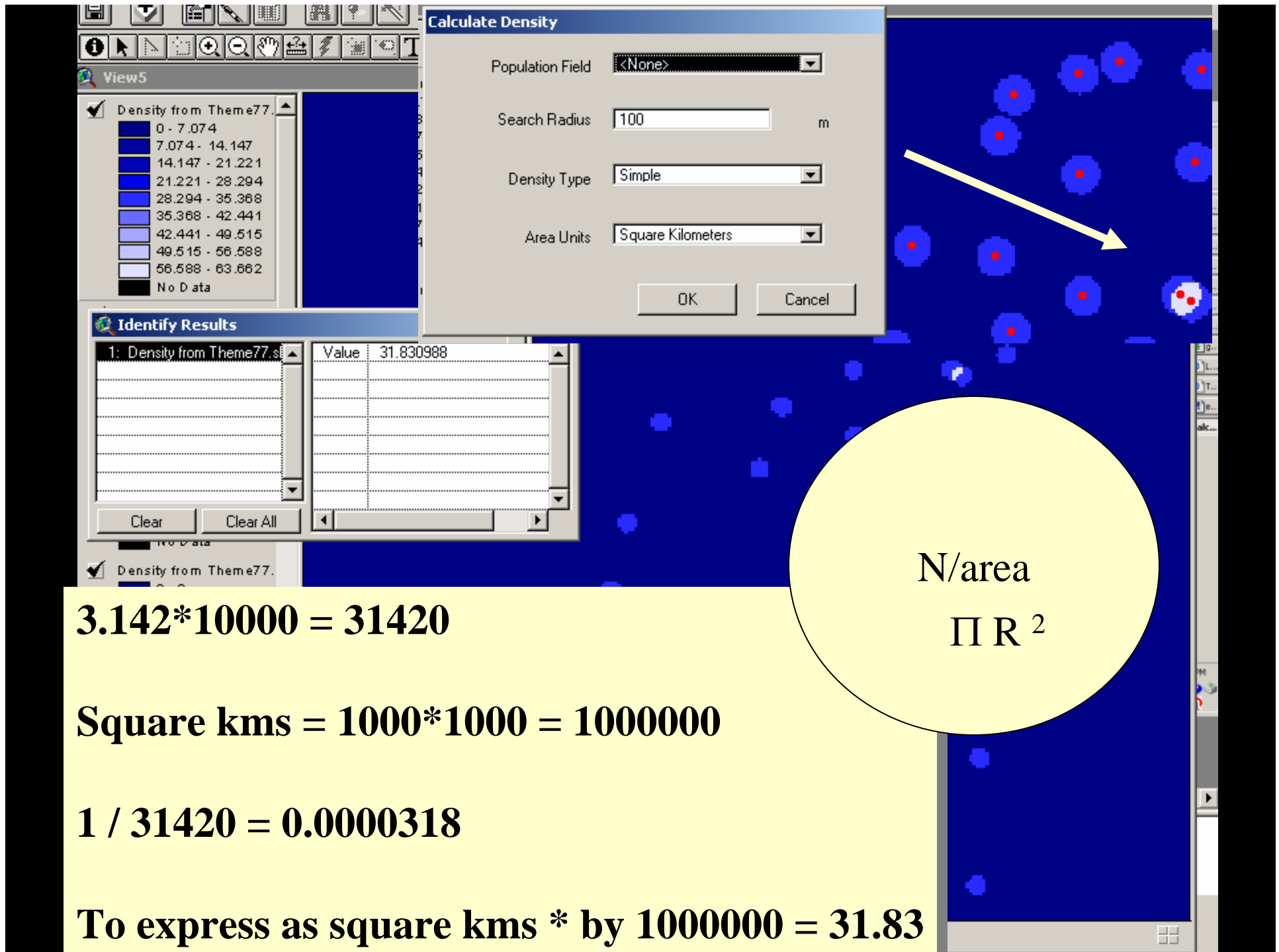
Closer two objects are.....more likely to be interacting.

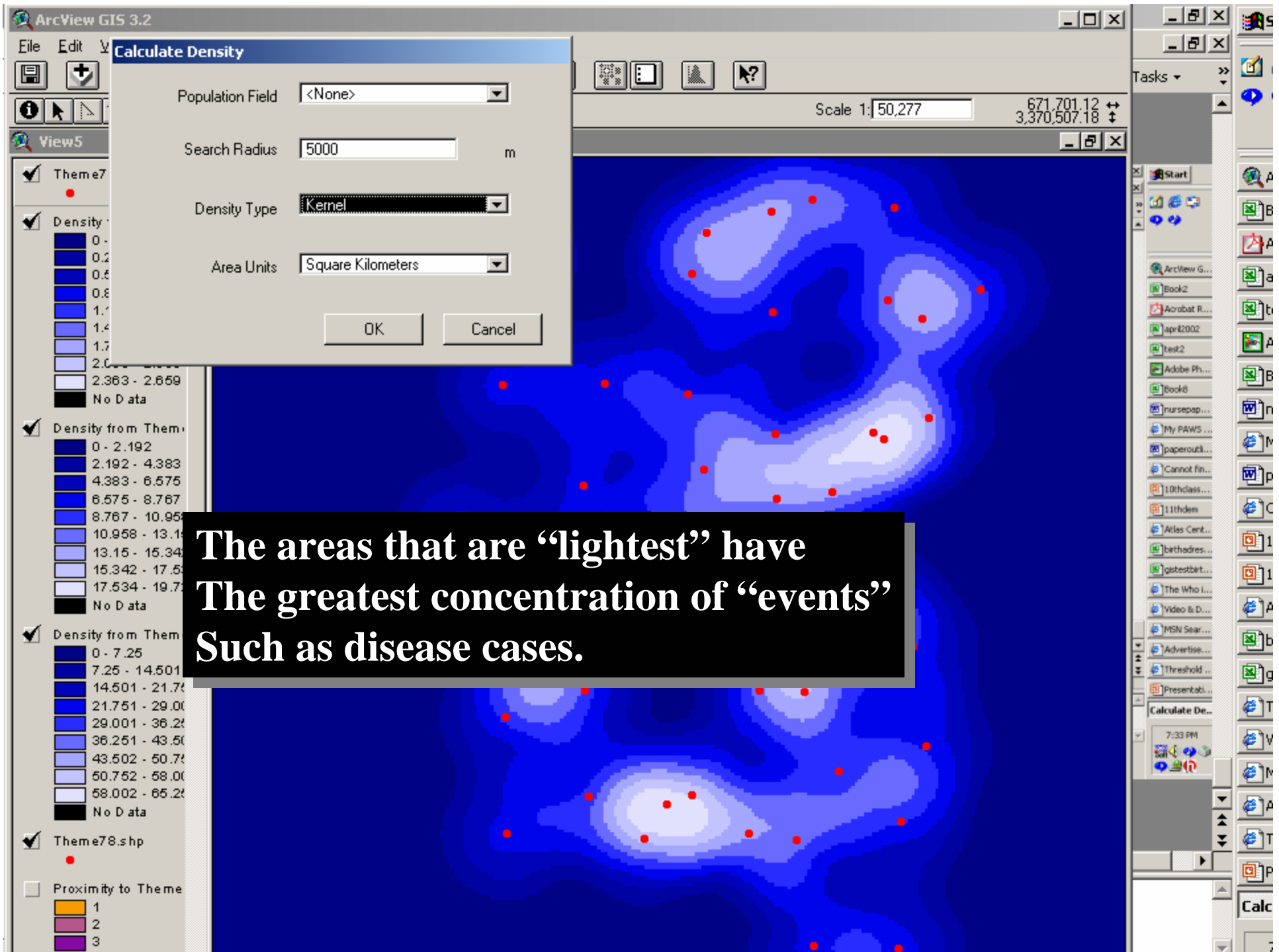
*Therefore, the center of several objects,
likely to be a common influence*

Several ways to do this in the GIS

*One is Kernel Density Analysis,
Similar approach to the
Anthrax example*



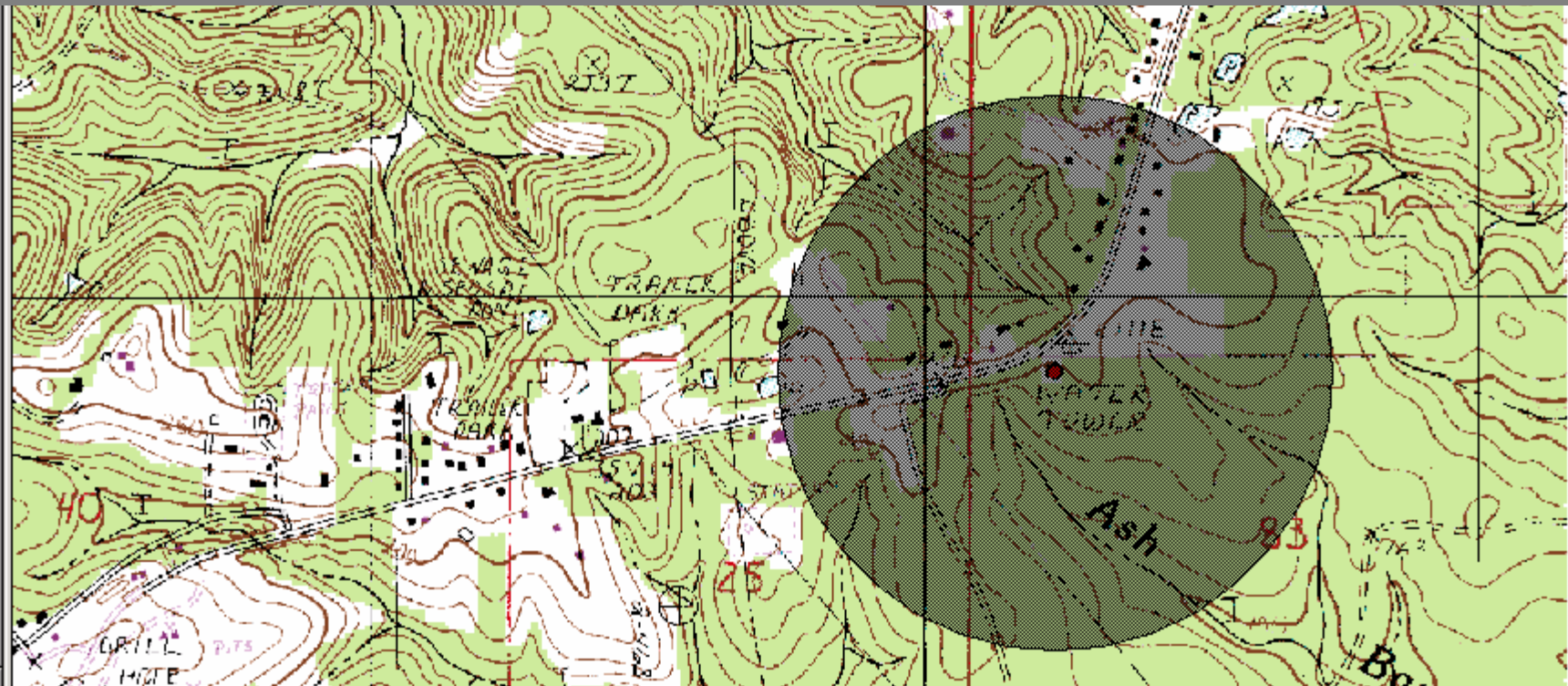




Final Exercise

A farmer is found with a high fever and developing pustules on his outer extremities, especially on the soles of his feet and palms of his hands.

The EOC draws an immediate exposure area of 500 meters around the farm.



In GIS speak, what is this exposure area called?

In epidemiology speak what would this area be called?

Why did the EOC do this?

How would this area be turned into an exposure buffer on the ground?

What data sets are visible, what other datasets would be useful?

10 minutes

Why would these additional buffers be added?

What additional information would the EOC ask the field team for?

5 minutes